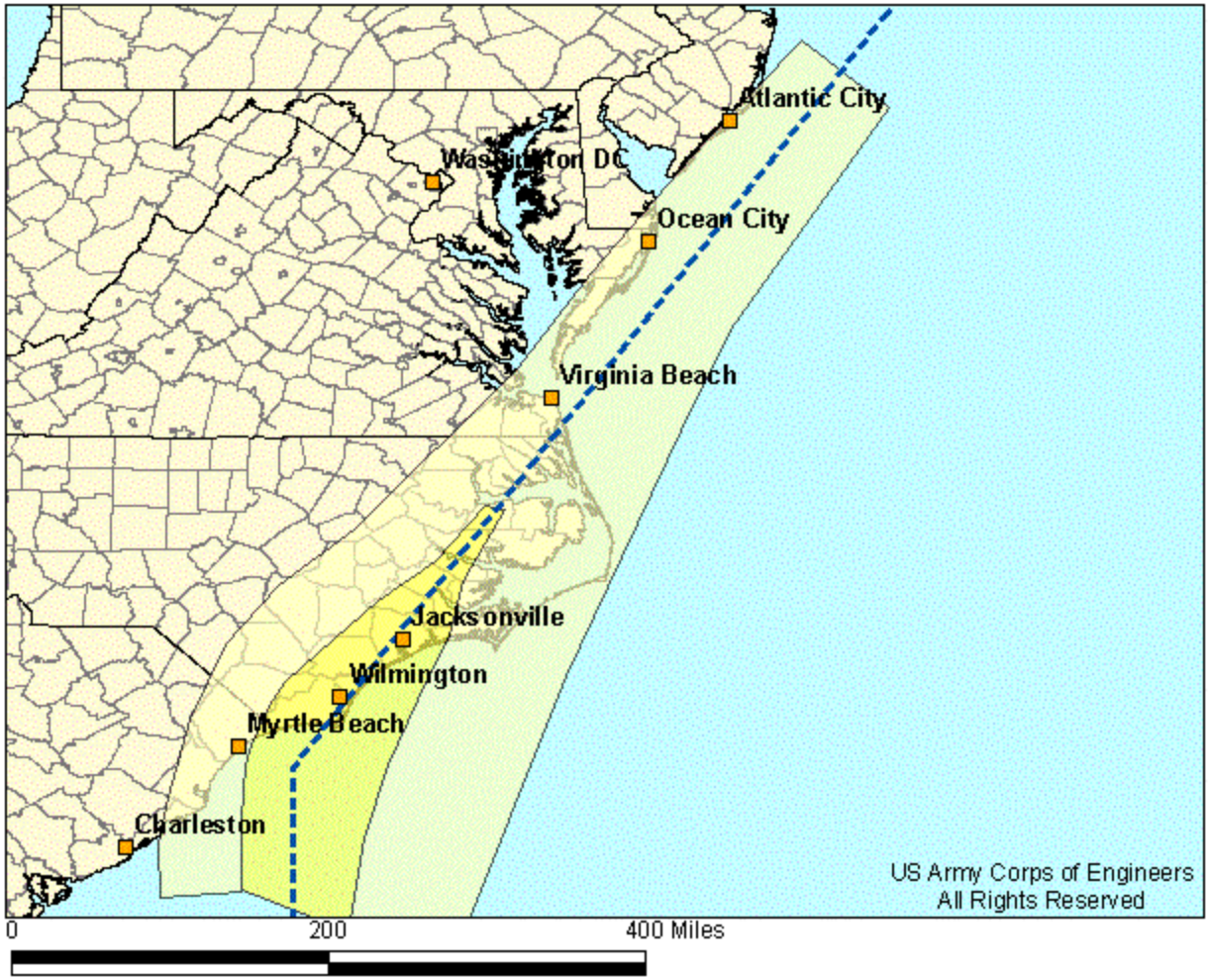
US Army Corps of Engineers

Hurricane Hanna Projected Damage Areas

Landfall Expected In About 42 Hours

For Planning Purposes Only!



Post Landfall Projected Damage Areas

This model is based on a Category 1 storm making landfall near Wilmington, NC.

Forecast Track

Projected Damage Areas

- CAT 0-type damage
- CAT 1-type damage
- CAT 2-type damage
- CAT 3-type damage
- CAT 4-type damage
- CAT 5-type damage

Information provided on this page displays a Category 1 storm making landfall near Wilmington, NC. These projections are based on information from the NHC (0830 EDT 09/04/2008) forecast.

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

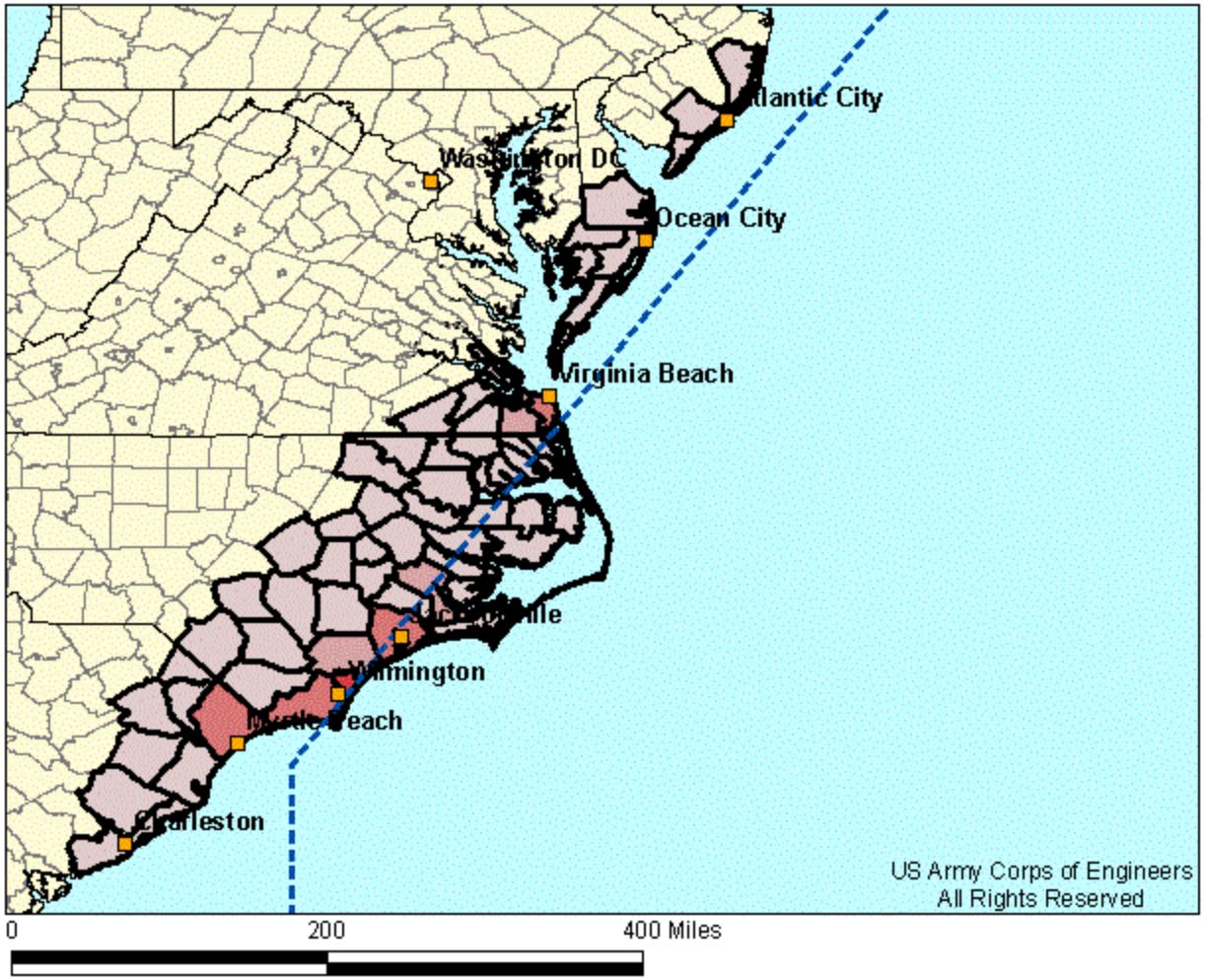
Hurricane Hanna Projected Damage Areas	
Generated By: Siemsen, LRL 0900 EDT 09/04/2008	
Sources: HURREVAC LRL-DEBRIS	Page 1 of 14

US Army Corps of Engineers

Hurricane Hanna Debris Model

Landfall Expected In About 42 Hours

For Planning Purposes Only!



Post Landfall Debris Model Results

North Carolina - 2,472,000 Yards
Virginia - 867,000 Yards
South Carolina - 327,000 Yards
New Jersey - 104,000 Yards
Maryland - 40,000 Yards
Delaware - 23,000 Yards

Model results per County on following page

This model is based on a Category 1 storm making landfall near Wilmington, NC.

Forecast Track

Debris

- < 100,000 cubic yards
- 100,000 - 249,999 cubic yards
- 250,000 - 499,999 cubic yards
- 500,000 - 999,999 cubic yards
- >1,000,000 cubic yards

Information provided on this page displays a Category 1 storm making landfall near Wilmington, NC. These projections are based on information from the NHC (0830 EDT 09/04/2008) forecast. The amount of debris forecasted is possible total volume, not necessarily the volume that may need to be removed with Federal funds, but does not include volume that may be covered by private insurance. Debris volume may include storm surge generated debris.

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Hanna Debris Model

Generated By:
Siemsen, LRL 0900 EDT 09/04/2008

Sources:
HURREVAC
LRL-DEBRIS

US Army Corps of Engineers

Hurricane Hanna Debris Model

Landfall Expected In About 42 Hours

For Planning Purposes Only!

State	Yards per State	County	Yards per County
Delaware		Sussex	23,000
Delaware	23,000		
Maryland		Somerset	< 1,000
		Wicomico	2,000
		Worcester	38,000
Maryland	40,000		
New Jersey		Atlantic	64,000
		Cape May	29,000
		Ocean	11,000
New Jersey	104,000		
North Carolina		Beaufort	86,000
		Bertie	18,000
		Bladen	28,000
		Brunswick	324,000
		Camden	7,000
		Carteret	70,000
		Chowan	9,000
		Columbus	60,000
		Craven	218,000
		Cumberland	4,000
		Currituck	15,000
		Dare	24,000
		Duplin	57,000
		Edgecombe	15,000
		Gates	9,000
		Greene	11,000
		Halifax	3,000
		Hertford	16,000

State	Yards per State	County	Yards per County
North Carolina		Hyde	7,000
(continued)		Johnston	3,000
		Jones	36,000
		Lenoir	36,000
		Martin	16,000
		New Hanover	590,000
		Northampton	< 1,000
		Onslow	356,000
		Pamlico	16,000
		Pasquotank	24,000
		Pender	155,000
		Perquimans	9,000
		Pitt	94,000
		Robeson	23,000
		Sampson	39,000
		Tyrrell	5,000
		Washington	21,000
		Wayne	64,000
		Wilson	5,000
North Carolina	2,473,000		
South Carolina		Berkeley	< 1,000
		Charleston	2,000
		Dillon	< 1,000
		Florence	< 1,000
		Georgetown	44,000
		Horry	274,000
		Marion	5,000
		Williamsburg	2,000

The amount of debris forecasted is possible total volume, not necessarily the volume that may need to be removed with Federal funds, but does not include volume that may be covered by private insurance. Debris volume may include storm surge generated debris.

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Hurricane Hanna Debris Model

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Sources:
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LRL-DEBRIS

US Army Corps of Engineers

Hurricane Hanna Debris Model

Landfall Expected In About 42 Hours

For Planning Purposes Only!

State	Yards per State	County	Yards per County
South Carolina	327,000		
(continued)			
Virginia		Accomack	26,000
		Chesapeake city	129,000
		Hampton City	97,000
		Isle Of Wight	4,000
		Newport News city	32,000
		Norfolk City	161,000
		Northampton	8,000
		Poquoson City	4,000
		Portsmouth city	72,000
		Southampton	< 1,000
		Suffolk City	46,000
		Virginia Beach city	286,000
		York	2,000
Virginia	867,000		

The amount of debris forecasted is possible total volume, not necessarily the volume that may need to be removed with Federal funds, but does not include volume that may be covered by private insurance. Debris volume may include storm surge generated debris.

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Hurricane Hanna Debris Model

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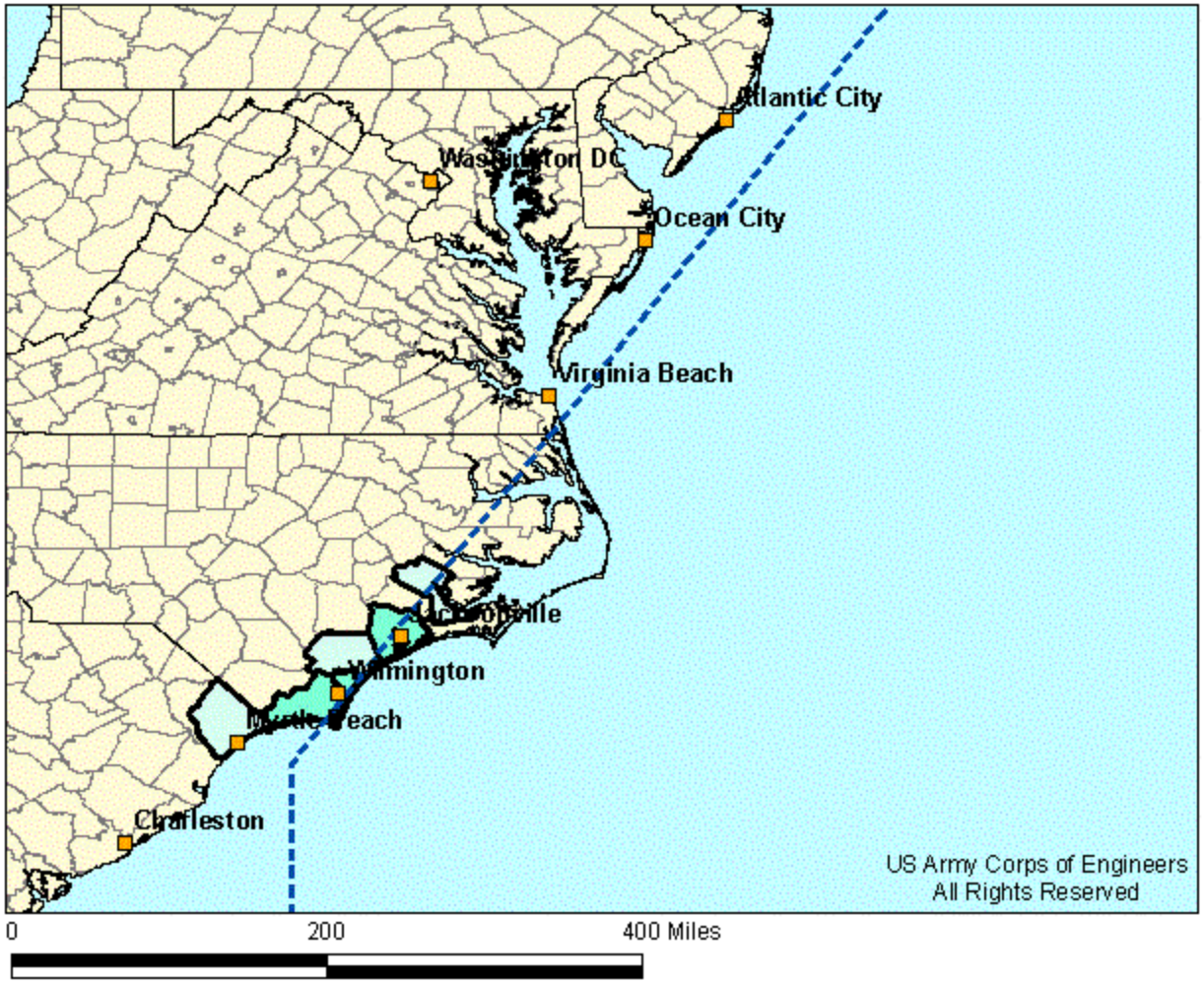
Sources:
HURREVAC
LRL-DEBRIS

Hurricane Hanna Commodities Model

Landfall Expected In About **42** Hours

US Army Corps of Engineers

For Planning Purposes Only!



Post Landfall Water Model Results

Day One / Day Two / Day Three
North Carolina – 6/12/25 Truckloads
South Carolina – 1/2/2 Truckloads

Model results per County on following page

This model is based on a Category 1 storm making landfall near Wilmington, NC.

Forecast Track

Commodities

- < 5 Trucks Each
- 5 - 10 Trucks Each
- 11 - 20 Trucks Each
- 21 - 40 Trucks Each
- > 40 Trucks Each

Information provided on this page displays a Category 1 storm making landfall near Wilmington, NC. These projections are based on information from the NHC ***(0830 EDT 09/04/2008)*** forecast. The amount of commodities forecasted is based on Mission Guide Book requirements and SME input. The graphic represents single day needs with full distribution system in place and operating.

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Hanna Commodities Model	
Generated By: Siemsen, LRL 0900 EDT 09/04/2008	
Sources: HURREVAC LRL-DEBRIS	Page 5 of 14

US Army Corps of Engineers

Hurricane Hanna Commodities Model

Landfall Expected In About 42 Hours

For Planning Purposes Only!

State	Truckloads per State	County	Truckloads per County
North Carolina		Brunswick	5
		Craven	3
		New Hanover	8
		Onslow	7
		Pender	2
North Carolina	25		
South Carolina		Horry	2
South Carolina	2		

The amount of commodities forecasted is based on Mission Guide Book requirements and SME input and the above table indicates suggested needs based on phased deployment of a commodities distribution system.

Details about this model may be obtained at http://www.englink.usace.army.mil
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Hurricane Hanna Commodities Model

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Sources:
HURREVAC
LRL-DEBRIS

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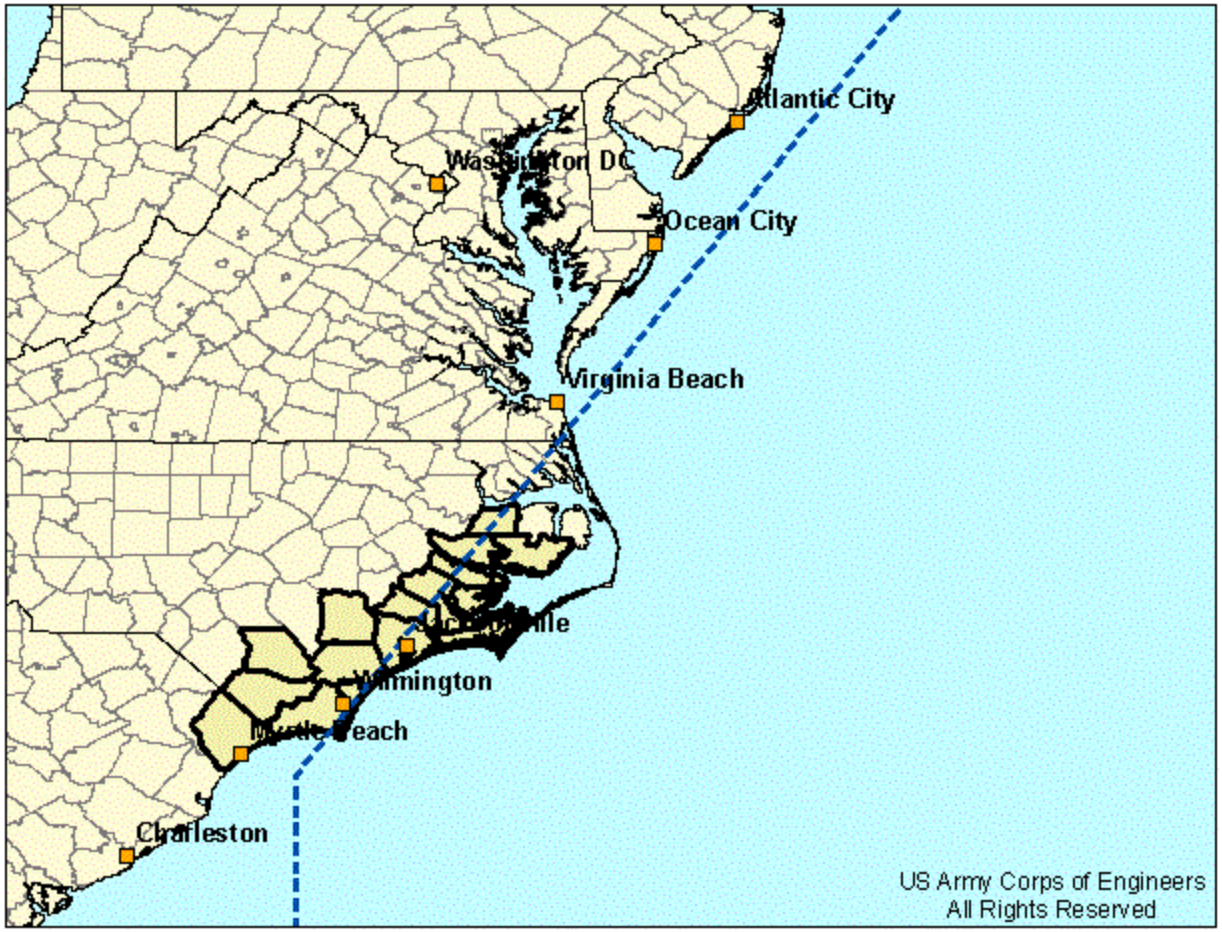
Hurricane Hanna Temporary Roofing Model

Landfall Expected In About 42 Hours

For Planning Purposes Only!



0 200 400 Miles

Post Landfall Temporary Roofing Model Results

North Carolina - 4,900
South Carolina - 300

Model results per County on following page

This model is based on a Category 1 storm making landfall near Wilmington, NC.

Forecast Track

Temporary Roofing

- < 2,000 units
- 2,000 - 3,999 units
- 4,000 - 5,999 units
- 6,000 - 9,999 units
- > 10,000 units

Information provided on this page displays a Category 1 storm making landfall near Wilmington, NC. These projections are based on information from the NHC (0830 EDT 09/04/2008) forecast. Temporary roofing is based on 2% in CAT 1.

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Hanna Roofing Model

Generated By:
Siemsen, LRL 0900 EDT 09/04/2008

Sources:
HURREVAC
LRL-DEBRIS

US Army Corps of Engineers

Hurricane Hanna Temporary Roofing Model

Landfall Expected In About 42 Hours

For Planning Purposes Only!

State	House Units per State	County	House Units per County
North Carolina		Beaufort	200
		Bladen	< 100
		Brunswick	900
		Carteret	< 100
		Columbus	< 100
		Craven	600
		Duplin	< 100
		Hyde	< 100
		Jones	< 100
		New Hanover	1,700
		Onslow	1,100
		Pamlico	< 100
		Pender	400
		Washington	< 100
North Carolina	4,900		
South Carolina		Horry	300
South Carolina	300		

Temporary roofing is based on 2% in CAT 1.

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

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Hurricane Hanna Roofing Model

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Sources:
HURREVAC
LRL-DEBRIS

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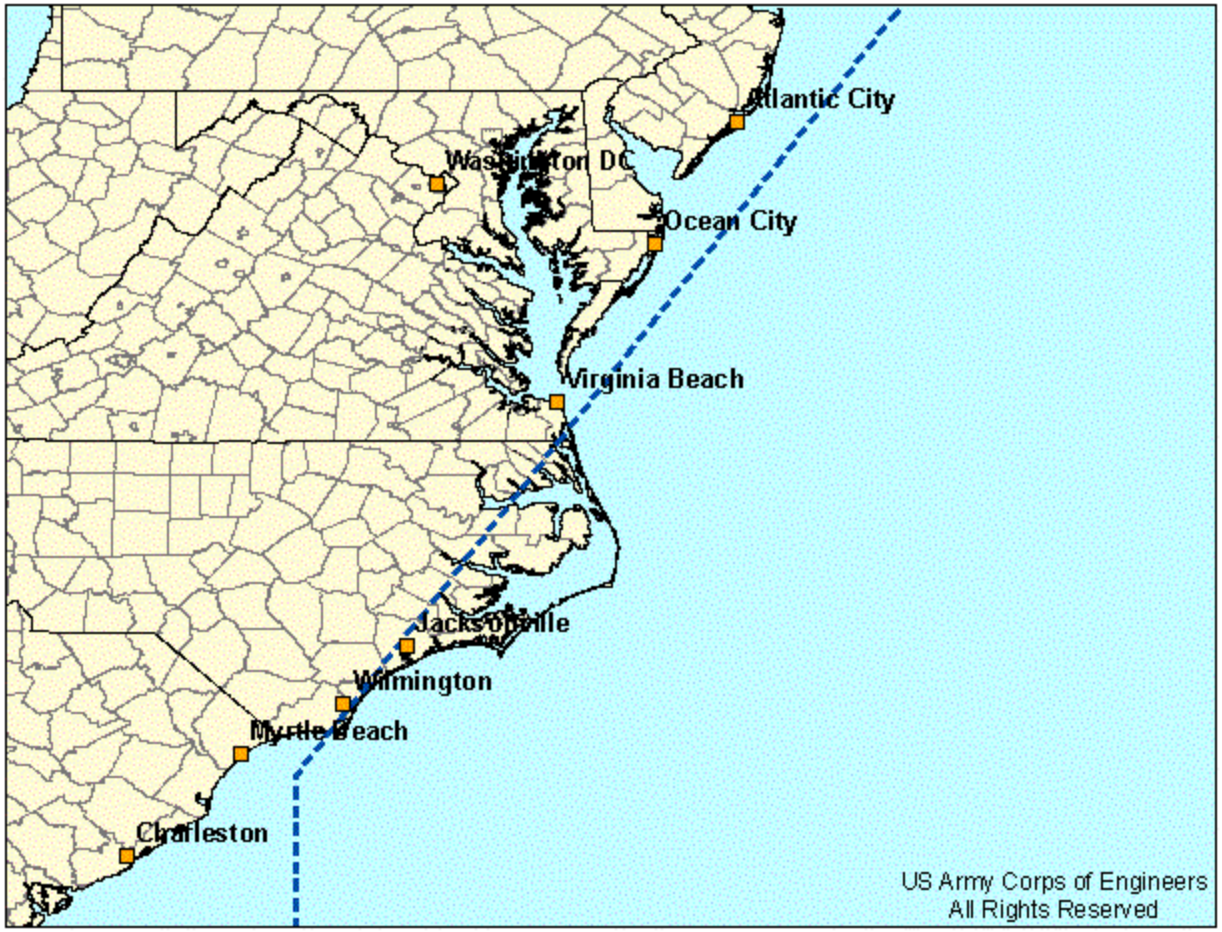
Hurricane Hanna Temporary Housing Model

Landfall Expected In About 42 Hours

For Planning Purposes Only!



0 200 400 Miles

Post Landfall Temporary Housing Model Results

None Expected

Model results per County on following page

This model is based on a Category 1 storm making landfall near Wilmington, NC.

Forecast Track

Temporary Housing

- < 2,000 units
- 2,000 - 3,999 units
- 4,000 - 5,999 units
- 6,000 - 9,999 units
- > 10,000 units

Information provided on this page displays a Category 1 storm making landfall near Wilmington, NC. These projections are based on information from the NHC (0830 EDT 09/04/2008) forecast. Temporary housing is based on nothing.

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Hanna Housing Model	
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Sources: HURREVAC LRL-DEBRIS	Page 9 of 14

US Army Corps of Engineers

Hurricane Hanna Temporary Housing Model

Landfall Expected In About 42 Hours

For Planning Purposes Only!

State	House Units per State	County	House Units per County

Temporary housing is based on nothing.

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

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Hurricane Hanna Housing Model

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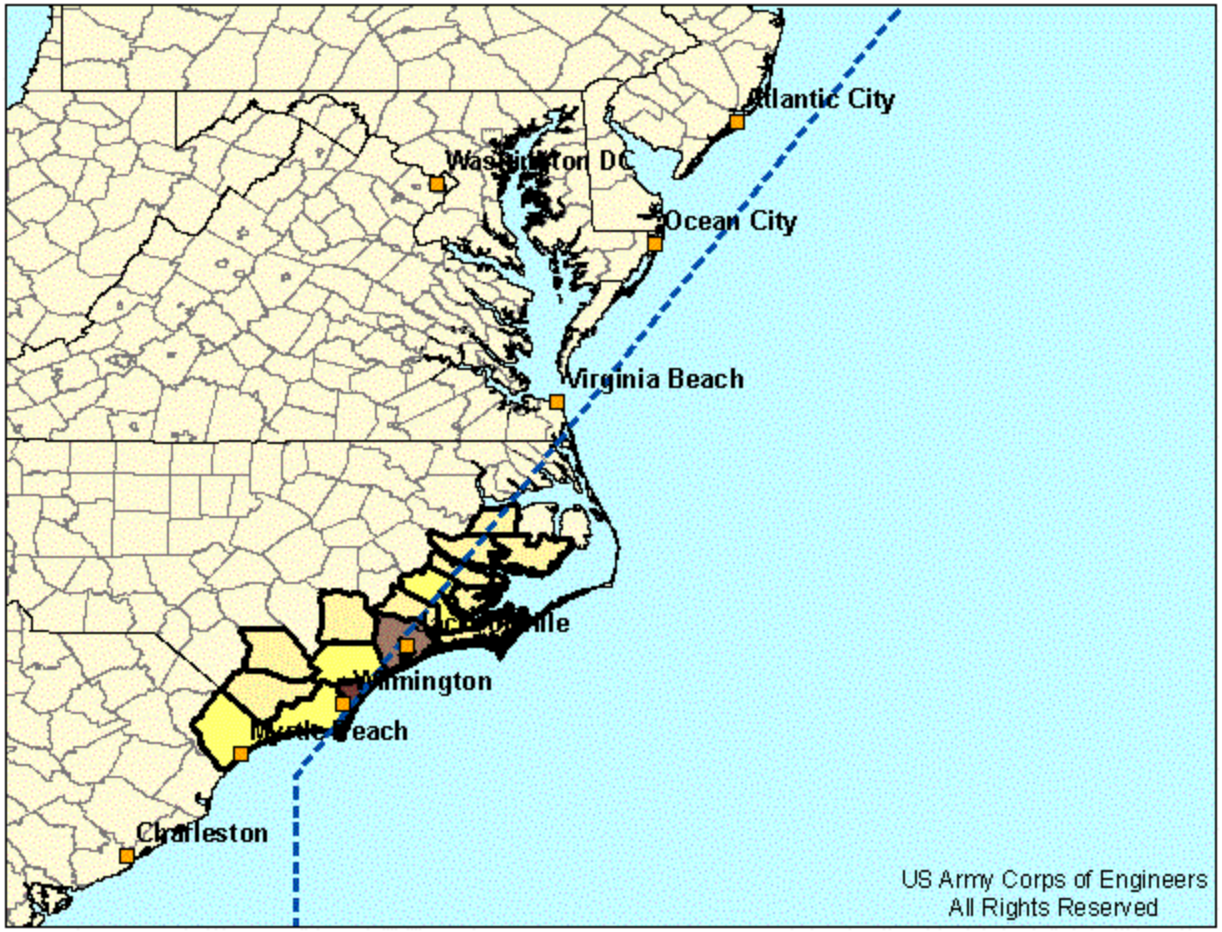
Sources:
HURREVAC
LRL-DEBRIS

US Army Corps of Engineers

Hurricane Hanna Population Model

Landfall Expected In About 42 Hours

For Planning Purposes Only!



0 200 400 Miles

Post Landfall Population Model Results

North Carolina - 635,000
South Carolina - 26,000

Model results per County on following page

This model is based on a Category 1 storm making landfall near Wilmington, NC.

Forecast Track

Population

- < 25,000 persons
- 25,000 - 99,999 persons
- 100,000 - 174,999 persons
- 175,000 - 249,999 persons
- > 250,000 persons

Information provided on this page displays a Category 1 storm making landfall near Wilmington, NC. These projections are based on information from the NHC (0830 EDT 09/04/2008) forecast. The numbers of persons included in this model output are those that would be included within estimated hurricane force winds (Census 2000 values adjusted to July 2007 values).

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Hanna Population Model	
Generated By: Siemsen, LRL 0900 EDT 09/04/2008	
Sources: HURREVAC LRL-DEBRIS	Page 11 of 14

US Army Corps of Engineers

Hurricane Hanna Population Model

Landfall Expected In About 42 Hours

For Planning Purposes Only!

State	Population per State	County	Population per County
North Carolina		Beaufort	18,000
		Bladen	< 1,000
		Brunswick	100,000
		Carteret	11,000
		Columbus	8,000
		Craven	71,000
		Duplin	9,000
		Hyde	< 1,000
		Jones	9,000
		New Hanover	191,000
		Onslow	163,000
		Pamlico	3,000
		Pender	47,000
		Washington	5,000
North Carolina	635,000		
South Carolina		Horry	26,000
South Carolina	26,000		

The number of persons estimated to be within the hurricane force winds comes from Census 2000 values adjusted to July 2007 values.

Details about this model may be obtained at http://www.englink.usace.army.mil
or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

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Hurricane Hanna Population Model

Generated By:
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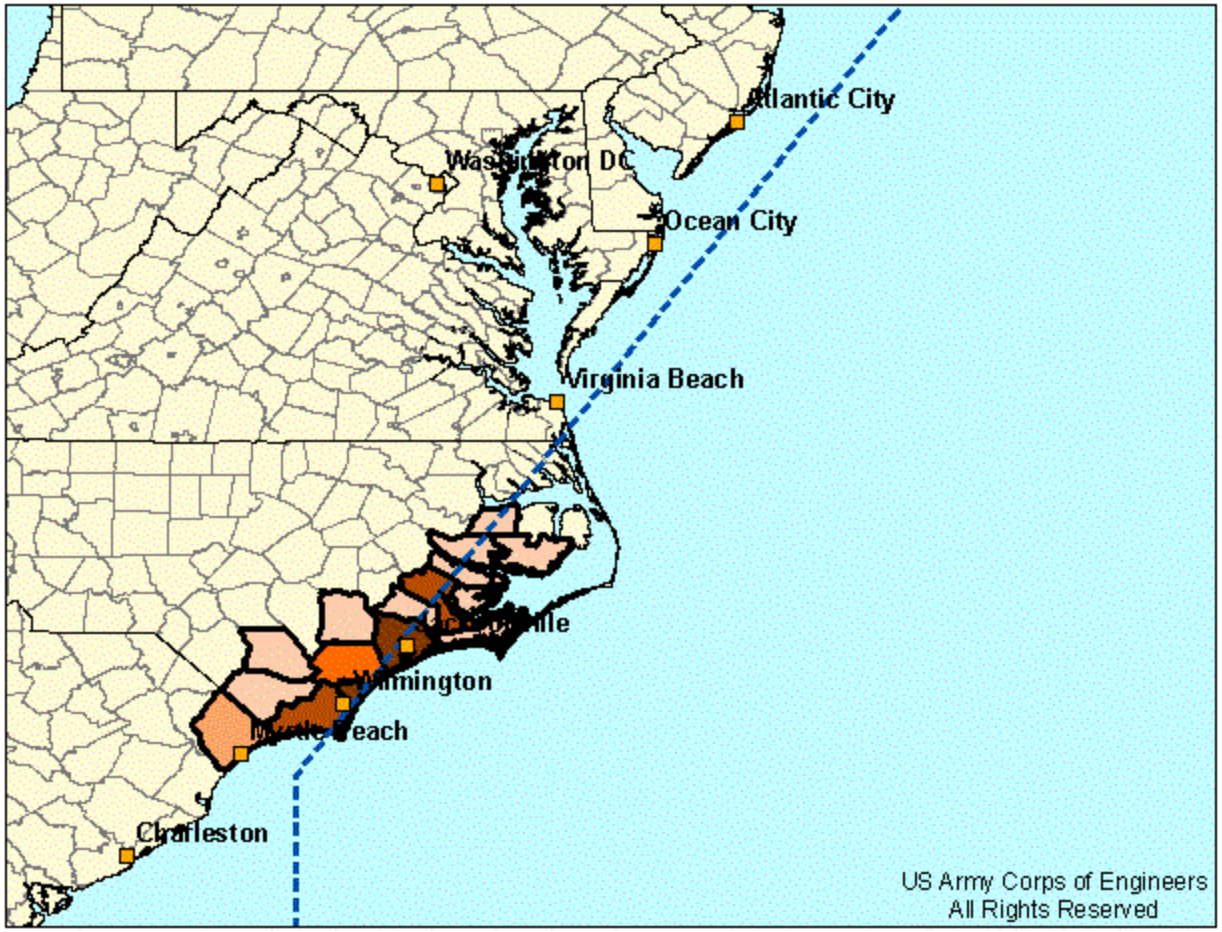
Sources:
HURREVAC
LRL-DEBRIS

US Army Corps of Engineers

Hurricane Hanna Households Model

Landfall Expected In About 42 Hours

For Planning Purposes Only!



0 200 400 Miles

Post Landfall Households Model Results

North Carolina - 249,000
South Carolina - 12,000

Model results per County on following page

This model is based on a Category 1 storm making landfall near Wilmington, NC.

Forecast Track

Households

- < 7,500 households
- 7,500 - 14,999 households
- 15,000 - 24,999 households
- 25,000 - 49,999 households
- > 50000 households

Information provided on this page displays a Category 1 storm making landfall near Wilmington, NC. These projections are based on information from the NHC (0830 EDT 09/04/2008) forecast. The numbers of households included in this model output are those that would be included within estimated hurricane force winds (Census 2000 values adjusted to July 2007 values).

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Hurricane Hanna Households Model	
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Sources: HURREVAC LRL-DEBRIS	Page 13 of 14

US Army Corps of Engineers

Hurricane Hanna Households Model

Landfall Expected In About 42 Hours

For Planning Purposes Only!

State	Households per State	County	Households per County
North Carolina		Beaufort	8,000
		Bladen	< 1,000
		Brunswick	42,000
		Carteret	5,000
		Columbus	3,000
		Craven	29,000
		Duplin	4,000
		Hyde	< 1,000
		Jones	4,000
		New Hanover	81,000
		Onslow	52,000
		Pamlico	< 1,000
		Pender	19,000
		Washington	2,000
North Carolina	249,000		
South Carolina		Horry	12,000
South Carolina	12,000		

The number of households estimated to be within the hurricane force winds comes from Census 2000 values adjusted to July 2007 values.

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